The Precautionary Group

Protecting Cascade Forests and Puget Sound

January 23, 2012

Puget Sound Partnership
326 East D Street
Tacoma, WA 98421

Re: Draft Action Agenda Update - Comments

Our apology is offered for the late comments, but we only recently became aware of the Draft Action Agenda (Agenda). We applaud your very important work on this project, and that of all of the involved agencies, environmental groups, volunteers and staff. It is a major task that must be completed fully and successfully. Also, we offer our assistance in any way that may be helpful.

Comment 1: Our position is that a new Section C6 (**Sewage Sludge**), under the heading, 'Reduce and Control the Sources of Pollution to Puget Sound,' should be included following Section C3 (Agricultural Runoff), C4 (Surface Runoff from Forest Lands) and C5 (Wastewater). The new Section C6 should be titled openly as '**Sewage Sludge**,' and it should be prepared without the assistance of any representatives of EPA, DOE, DNR, King County Wastewater Treatment Division, or any Federal, State or County agency or individual who is associated with wastewater treatment, biosolids or sewage sludge. An objective and unbiased approach will strengthen the impact of the Agenda.

Position Statement: In several sections of the Agenda, Sewage Sludge is referred to as Biosolids, which we consider to be no more than a tactically-crafted euphemism for material that should be referred to more appropriately as either Sewage Sludge or as Poorly-Processed Sewage Sludge. There are likely many reasons why Sewage Sludge is not addressed fully or properly in the Agenda, as well as in many Federal, State and County programs and documents, which reasons are centered primarily around key political and economic issues related to the extreme high costs that would be incurred to achieve proper Sewage Sludge treatment, management and disposal.

Sewage Sludge is a difficult and complex subject that incites conflict between environmental, social and commercial interests, and there are substantial economic consequences associated with the achievement of proper Sludge management. Also, there are critical human and environmental health consequences related to improper processing and disposal of Sludge. A major driver of the conflict is that Sewage Sludge is mandated to have intrinsic 'beneficial uses,' which challenges logic, in light of the vast array of carcinogenic and otherwise toxic components in Sludge.

While Sewage Sludge does have certain useful applications for mine site reclamation on barren lands subject to erosion and slow recovery, for example, the land application of Sewage Sludge to agricultural lands or in forests has only minimal benefit for fertilization or enhanced tree growth, none of which outweighs the cumulative detrimental effects on human and environmental health and general ecosystem recovery. The land application of Sludge, which is properly designated as Toxic or Hazardous Material, incites ecosystem disruption and precludes ecosystem recovery.

The collective works of the EPA, State agencies, such as DOE and DNR, and the County Wastewater Treatment Divisions, along with University of Washington researchers who gain benefit from their affiliations with the agencies, plus the commercial firms that depend in large part on the availability of Sewage Sludge for their business interests, all contribute directly to the

A Washington State 501(c)(3) Nonprofit Corporation
19211 64th Place NE, Kenmore, WA 98028-3380
www.precautionarygroup.org rhono@precautionarygroup.org 425.772.1473

detrimental effects of Sewage Sludge on human and environmental health. The cumulative adverse effects of the heavy metals that are applied to forest soils and waters alone, and which accumulate in soil and water sediments, and in biological systems, have never been studied in a real-time, serial approach, such as is proposed by our intended research plan. Similarly, basic toxicology studies on Sewage Sludge and Sludge components that are introduced into forest soils and water systems have not been conducted, based at least on minimal conventional pharmacological or food quality testing or regulatory standards. Most importantly, safety testing has not been performed on Sludge or Sludge components based on a conventional null hypothesis, such that the exposure to, or treatment of, animals shows no effect. If we are expected to indirectly eat, drink or otherwise inadvertently consume the various components of Sewage Sludge through commonly-available water, animal and plant resources, at least minimal food safety testing should be performed.

It is our position that even by your good works, Puget Sound cannot recover because of the continuing onslaught of toxic and carcinogenic pollutants and contaminants from Sewage Sludge that enter the Sound daily in ground and surface waters that flow from agricultural and forest lands subjected to Sewage Sludge application. Recovery and restoration cannot occur so long as this major source of pollution and contamination continues.

Comment 2:

Statement in the Agenda: "Another potential pathway for the distribution of pollutants through the wastewater stream is the use of wastewater by-products, such as biosolids, for land application as fertilizer. King County began using biosolids as fertilizers in commercial forests in 1987, and continues to see enhanced growth rates of trees as a result of increasing soil nutrients."

Comment: Sewage Sludge, or Biosolids, is not a fertilizer, but does provide some nutrients that are assimilated by some plants for their benefit, while they are highly toxic to many other plant species, to microbes and to animals. We have many hundreds of images of killed animals, plants and microbes in our Cascade forest ecosystem, as a direct result of Sludge application, and some mushrooms actually bioaccumulate heavy metals and other toxins from Sewage Sludge. This cumulative effect fits the precise definition of Ecosystem Disruption.

Comment 3:

Statement in the Agenda: "The Washington State Department of Ecology is directed by statute to maximize the beneficial uses of biosolids and recycle as appropriate. New rules for biosolids management, including establishing what comprises clean biosolids, came into effect in June 2007. Biosolids can be used anywhere plants are grown, most notably forests, agriculture, and land reclamation. Excess nitrogen runoff is the greatest water quality concern from use of biosolids (Ecology, 1999); other toxics and pathogens are regulated by EPA under the Clean Water Act (Cogger et al., 2000)."

Comment: There is an implied conflict between being directed by statute to maximize the beneficial uses of biosolids and the toxic and other adverse consequences that result therefrom. Nitrogen runoff is not the 'greatest water quality concern,' but is used as an obfuscation and a justification for under-regulation by DOE. DOE fails in this case as the assigned enforcement office, yet they collaborate with the Counties, the commercial compost and fertilizer interests and the lumber companies that provide convenient recipients of Sludge materials, with assurance of limited regulation and no enforcement of compliance with the Clean Water Act or the Endangered Species Act. EPA has relegated its authority to the States and Counties, that in turn rely on an absence of data on adverse effects, as supported by Universities, as rationale for their behavior. Puget Sound

cannot recover in the presence of a continuous inflow of contaminants that originate in the many thousands of tons of Sewage Sludge that are applied to our forest soils and waters daily.

The Precautionary Group: We are The Precautionary Group, a Washington State non-profit 501(c)(3) corporation dedicated to evaluating the adverse effects of Sewage Sludge on the greater Puget Sound Ecosystem. Based on our investigations, it is clear that the application of Sludge to forest soils and waters, and to floodplain agricultural lands, degrades the natural environment of the Cascades and Puget Sound, incites ecosystem disruption and precludes sustainability.

Our objectives are to evaluate the microbiology and chemistry of Sewage Sludge, determine the effects of Sludge on the biota of the Snoqualmie-Skykomish Watershed, and determine the biodistribution, bioaccumulation and fate of Sludge-borne toxins in the greater Puget Sound Ecosystem. Our work will represent the first ever science-based studies of the distribution, fate and effects of Sludge on the Cascade and Puget Sound ecosystem.

The Precautionary Group is experienced in the field of Sewage Sludge. We monitor and sample recent and current Sludge dumping operations in the Snoqualmie, Snohomish and Tolt watersheds within the greater Stillaguamish and Snohomish Watersheds, most recently in Markworth State Forest and adjacent forest lands within Northeastern King County and Southeastern Snohomish County. We have been monitoring a recent Sludge dumping site in Markworth State Forest nearly weekly for about 18 months, and have documented Sludge leachate and runoff flows into ground water, wetlands and sensitive streams that flow directly to the Snohomish River and Puget Sound. The millions of gallons of contaminated flows clearly defeat your efforts to mitigate pollution and contamination of the Sound in real-time by the entry of the continuous flows of these foul waters.

We are also monitoring the application of Sludge to Agricultural lands in the floodplains between Everett and Snohomish, which are intended for organic vegetable farming, yet while the surrounding farms lands are being subjected to Sludge dumping, a clear contradiction of effort.

Thus far, our work has been restricted to direct observation of land application procedures, plus sampling the applied Sludge materials over about 18 months, as well as filming the effects. We have not yet been able to achieve laboratory analysis of the collected and frozen-stored samples, because of restricted funding. We have made arrangements for laboratory analysis of the 18 months of collected samples, using advanced technologies, the results of which will be revealing. Our intent is to publish the results of the analyses of the contents of the fresh applied Sludge, plus the distribution in surface and ground waters of key toxic analytes, as well as the bioaccumulation, biodistribution, toxicity and ultimate fate of the carcinogenic heavy metals, biochemicals, pathogens and organics, that include key Endocrine Disrupting Chemicals, and so much more.

The results of our work should reveal the highly toxic and dangerous qualities of Sewage Sludge and the components thereof that are dumped daily into our Cascade forests soils and waters, and which flow to Puget Sound.

The Precautionary Principle: The Precautionary Principle tells us that when an activity raises threats of harm to human health or the environment, precautionary measures must be taken, even if cause and effect relationships are not fully established by science. The core tenets of the Precautionary Principle state that we must: 1) take preventive action in the face of uncertainty; 2) shift the burden of proof to proponents of an activity; 3) explore a wide range of alternatives to potentially harmful actions; and, 4) include public participation in all decision making. This Principle is not being applied to Sewage Sludge disposal in the Puget Sound region.

Our Contention: The Agenda cannot be considered as being a science-based or full-disclosure document, so long as one of the key sources of pollution and contamination to Puget Sound, i.e., Sewage Sludge disposal, is not addressed as a targeted agenda item. We believe that:

- The term biosolids is a contrived euphemism for Poorly-Processed Sewage Sludge, which was adopted primarily to address public perception, economic issues and convenience
- Sewage Sludge is costly to process, transport and eliminate properly, and therefore has been relegated to the most cost-efficient method of disposal
- Sewage Sludge is dangerous to human and environmental health
- The land application of Sludge incites ecosystem disruption and precludes ecosystem recovery
- Wildlife populations, such as wild fish, are rendered more susceptible to infectious, immune-dysfunction and other diseases when subjected to toxic contaminants and pollutants
- Sewage Sludge is Toxic and Hazardous Waste, and is considered as Dangerous Goods
- Puget Sound cannot recover in the presence of a continuous inflow of contaminants that originate in the tons of Sewage Sludge that are applied to our forest soils and waters daily
- The Agenda cannot achieve its stated objectives, so long as a key source of pollution and contamination of the Sound is not addressed fully and objectively, based on good science
- The core tenets of the Precautionary Principle are not being applied to the challenge of Sewage Sludge disposal in the Cascade Watersheds and Puget Sound

Clash of the Titans: The permitted, unregulated, land application of Sewage Sludge to Cascade forest soils and waters, and to agricultural lands in floodplains, is a Clash of the Titans, in this case, Commerce vs. the Environment. Specifically, the environment here includes both human and environmental health.

While we appreciate that corporations, agencies and people all have rights under the Constitution, and that the environment has no legal or civil rights at all, it is the case that people who are harmed or who suffer the threat of harm as a result of intended environmental perturbations and ecosystem disruption do have rights, which must be asserted.

We consider it to be an obligation of the Puget Sound Partnership to represent the basic rights of people to not have their health threatened or compromised by pollution and contamination of their living environment. Human health is a key part of the Puget Sound environment and must be afforded the same protection as the Sound itself, as well as its microbial, plant and animal inhabitants. If fish cannot live here, for example, neither can we.

About 10 million tons of Sewage Sludge originating from wastewater treatment plants are applied to lands in the US each year (EPA). About 60,000 tons of Sludge were applied to agricultural lands in Washington in 2010 (DOE), of about 120,000 tons generated by King County alone (KC). There is substantial literature, including from the EPA, that reports the "… adverse health effects from heavy metals and other hazardous materials contained in the waste," including that Sewage Sludge represents, "a serious threat to public health and the environment." (David L. Lewis, PhD). Further, the EPA Inspector General stated that EPA "… does not have an effective program for ensuring land compliance …" of Sludge, and "… cannot assure the public that current land application practices are protective of human health and the environment." The Inspector General also criticized EPA for conducting "… virtually no inspections of land application sites," and that EPA failed to collect data on accumulated pollutants at biosolids land application sites, despite the fact that federal law requires the agency to collect such data. EPA also failed to monitor whether producers or appliers actually adhered to federal regulations. The Inspector General concluded that

EPA's failure to commit resources to the biosolids program constituted an "… almost complete absence of a federal presence …," adding that the agency's conduct "… may result in increased risk to the environment." EPA seems to not have a single full-time employee currently working on biosolids. No one is watching out for Puget Sound, with regard to Sewage Sludge disposal.

Perception is Reality: A statement made to us directly by the King County Wastewater Treatment Division is that 'the main problem with biosolids is public perception.' They are right! However, what the County fails to appreciate is that Perception is Reality and that Reality becomes Common Knowledge - always. The public is absolutely correct: Sewage Sludge smells bad, looks bad and is very bad; it is toxic and infectious, despite the limited nutrient benefits to some plants.

During our field work and presentations, our general advice to mushroom hunters, berry pickers, shellfish collectors and fisherman is to never eat anything from the Cascade foothills or from Puget Sound, so long as the ground and surface waters that flow to the Sound from Cascade land application sites continue to be the receptacles for Sewage Sludge. The bioaccumulation of heavy metals, chemicals and biochemicals by plants, microbes and animals, plus exposure to multiple pathogens, presents an ever-present danger. Also, citizens and outdoorsmen we have encountered in rural areas state for us their outrage that the counties dump Sewage Sludge on or adjacent to their water well and agricultural lands, unbeknownst to the local inhabitants.

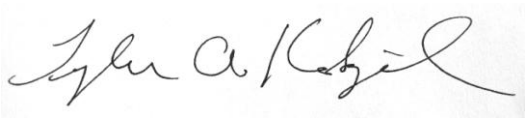
Just why is it that the population closest to Puget Sound experiences some of the highest rates of cancer? As yet, the reasons or causes remain unknown.

I will be pleased to discuss these issues with you first hand. If you want to know more about our work, additional information may be seen at our website at www.precautionarygroup.org.

Sincerely,

Richard C. Honour, PhD
Executive Director
425.772.1473
rhono@precautionarygroup.org

Richard E. Herman, PhD
Science Director



Tyler A. Kokjohn, PhD
Senior Scientist